graph darauf hinweisen, dass es aber auch ganz andere Entstehungsweisen von Erderhebungen gebe. Die Ursachen für die Entstehung von Dünen waren zwar richtig erkannt worden, ihre Übertragung auf Vorgänge der Gebirgsentstehung jedoch verfehlt.»

Literatur

- Ackery, P. R. und Vane-Wright, R. I. (1984): Milkweed butterflies, their cladistics and biology. London, Brit. Museum (Nat. Hist.).
- Alborn, H. T. u.a. (1997): An Elictor of Plant Volatiles from Beet Armyworm Oral Secretion. Science 276, S. 945–949.
- Bishop, J. A. und Cook, L. M. (1975): Moths, Melanism and Clean Air. Scientific American, Bd. 223, Nr. 1, S. 90-99.
- Herre, W. und Roehrs, M. (1971): Domestikation und Stammesgeschichte, in G. Heberer (Hg.): Die Evolution der Organismen, Bd. II/2., 3. Aufl., Stuttgart.
- Holdrege C. (1999): Science as process or dogma? The case of the peppered moth. Elemente der Naturwissenschaft 70, S. 39–51.
- Kettlewell, H. B. D. (1965): Insect Survival and Selection for Pattern. Science, Bd. 148, Nr. 3675, S. 1290–1296.
- Lewontin, R.C. (1992): The Dream of the Human Genome. The New York Preview of Books 39, Nr. 10; 31-40.
- Lewontin, R. C. (1993): The Doctrine of DNA Biology as Ideology, London.
- Remane, A. (1975): Offene Probleme der Evolution. Nova Acta Leopoldina 42 (218), S. 165-170.
- Remane, A., Storch, V. und Welsch, U. (1975): Evolution. Tatsachen und Probleme der Abstammungslehre. München.
- Suchantke, A. (1989): Die Mutations- und Selektionstheorie in der Konfrontation mit der Wirklichkeit, in: W. H. Arnold (Hg.): Entwicklung. Interdisziplinäre Aspekte zur Evolutionsfrage, S. 59–98, Stuttgart.
- Walter, H. und Breckle, S.-W. (1983): Ökologie der Erde, Bd. 1, Ökologische Grundlagen in globaler Sicht. Stuttgart.

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Design in Nature and Purpose in Language

An Indictment of the Darwinian Theory on Grounds of False Verbal Logic

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There are numerous examples of what might be interpreted as accidental design in nature: the weathering of rocks into Hoodoos, the wave-sorting of pebbles on a beach according to size, the ice crystals that «Jack Frost» leaves on a window pane are only three of many such examples. What these and the other examples have in common, however, is that they are all confined to the inorganic realm and are fully explainable in terms of what we already know about the workings of natural law. In

Darwinian and neo-Darwinian argument much is made of these and related examples in establishing the claim that nature is capable of «design without a Designer», indeed much of the theory's claim to credibility is based upon such examples of inorganic natural organization.

Design in nature, however, goes far beyond the inorganic, and is at its most remarkable in the organic realm. The Darwinian argument does not see this boundary and claims that where natural organization is concerned nothing of importance changes when we pass from the inorganic to the organic realm, except for the «degree of complexity». It can be demonstrated, however, that in making this claim something of the utmost importance is being overlooked, and further that if we closely examine this oversight the theory begins to crumble.

It is in the organic realm that we are first confronted with the phenomena that we call «death», which differs from the mere «cessation» of a natural inorganic process, in that death involves a loss of function, of complete organisms and of their integral parts. An inorganic process will cease, when the conditions that produce it change or the energy supplying it is exhausted, but cessation is not the same as a failure of function. Functional failure in an organism is analogous to that which happens in a broken machine, which is why we so often use mechanistic analogies to explain it. When we say that a machine has broken down, we mean that it can no longer serve the purpose for which it was designed. Indeed, we can say with complete assurance that a machine can only fail in relation to its purpose, i.e. in relation to the purpose given to it by its designer, otherwise we could never know that it had failed.

There is no need for us to call upon the concept of purpose to explain the appearance and disappearance of ice-crystal patterns on a window, they appear under certain temperature and moisture conditions, and disappear when those conditions no longer obtain, they serve no discernible function. In relation to living organisms, however, the concept of purpose is unavoidable, because each part of the organism has a function which it must perform in service to the whole. In animals, for example, the lungs have a different function/purpose from the digestive system, which is different in turn from the nervous or blood circulatory system, etc., and if any one of these systems break down the animal will likely die as a result, because each such system has a clear but different purpose to fulfill in keeping the creature alive.

In Darwinian thought the often immense complexity of organic design, as distinct from inorganic, is made sense of by using mechanistic analogies. Machines are manmade, and we understand how they work, so it helps to view what nature does as being somehow analogous to what we do. There is a problem with this analogy, however, because when we create a machine we do so for a reason, and in so doing we give the machine a purpose which is not arbitrary, but is manifest in the arrangement and functioning of its often complicated parts. If a complex machine later breaks down, we may try to repair it, and to be successful, especially if we are not its designer, we must obtain an understanding of the designer's original purpose, i.e. of what the machine was intended to do and exactly how it was intended to do it. The concept of «mechanism», therefore, is inescapably tied to the concept of a designer's